

Application No. 10/086,992
Amendment dated AUGUST 1, 2005
Reply to Final Office Action dated June 1, 2005

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended) A guidewire, comprising:
a proximal section comprising a metal or metal alloy, the proximal section having a distal end;
a distal section comprising a linear elastic nickel-titanium alloy, the distal section having a proximal end; and
a connector disposed adjacent the distal end of the proximal section and the proximal end of the distal section, the connector comprising a metal alloy having a Unified Numbering System (UNS) designation of N06625 ~~nickel-chromium alloy, a nickel-molybdenum alloy, or a cobalt alloy,~~ the connector being adapted and configured for permanently joining the proximal section and the distal section.
2. (original) A guidewire as in claim 1, wherein the proximal section has a first flexibility and the distal section has a second flexibility, and wherein the distal end of the proximal section and the proximal end of the distal section overlap to define a region that blends the first flexibility with the second flexibility.
3. (original) A guidewire as in claim 1, wherein the distal end of the proximal section has a reduced size, and the proximal end of the distal section has a reduced size.
4. (original) A guidewire as in claim 3, wherein the reduced size portions have a uniform profile.
5. (currently amended) A guidewire as in claim 3, wherein the reduced size portions have at least one of a taper or ~~wherein the reduced size portions have an interlocking~~ shape.

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5. (cancelled)

6. (original) A guidewire as in claim 1, wherein the distal end of the proximal section and the proximal end of the distal section are joined to define a butt joint.

7. (original) A guidewire as in claim 1, wherein the distal end of the proximal section defines a tapered portion and the proximal end of the distal section defines a tapered portion, and the tapered portions at least partially overlap each other.

8. (original) A guidewire as in claim 7, wherein the connector comprises connector material disposed between the tapered portions.

9. (previously presented) A guidewire as in claim 1, wherein the connector is welded to the proximal section.

10. (previously presented) A guidewire as in claim 9, wherein the metal or metal alloy of the proximal section comprises stainless steel, nickel-titanium alloy, nickel-chromium alloy, nickel-chromium-iron alloy, cobalt alloy, or combinations thereof.

11. (original) A guidewire as in claim 10, wherein the proximal section comprises stainless steel.

12. (original) A guidewire as in claim 1, wherein the guidewire further includes an outer structure disposed about at least a portion of the distal section.

13. (currently amended) A guidewire, comprising: as in claim 12,
a proximal section comprising a metal or metal alloy, the proximal section having a
distal end;
a distal section comprising a linear elastic nickel-titanium alloy, the distal section
having a proximal end;

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a connector disposed adjacent the distal end of the proximal section and the proximal end of the distal section, the connector comprising a nickel-chromium alloy, a nickel-molybdenum alloy, or a cobalt alloy, the connector being adapted and configured for permanently joining the proximal section and the distal section; and

an outer structure disposed about at least a portion of the distal section, wherein the outer structure comprises a polymer sleeve.

14. (original) A guidewire as in claim 13 wherein the guidewire further includes a flat ribbon attached to the distal section.

15. (original) A guidewire of claim 13, wherein the guidewire further comprises a coil disposed about a portion of the distal section, the coil having a distal portion that extends distally of the distal section.

16. (original) A guidewire of claim 12, wherein the outer structure comprises a first coil disposed about a portion of the distal section.

17. (currently amended) A guidewire, comprising: of claim 16,
a proximal section comprising a metal or metal alloy, the proximal section having a distal end;

a distal section comprising a linear elastic nickel-titanium alloy, the distal section having a proximal end;

a connector disposed adjacent the distal end of the proximal section and the proximal end of the distal section, the connector comprising a nickel-chromium alloy, a nickel-molybdenum alloy, or a cobalt alloy, the connector being adapted and configured for permanently joining the proximal section and the distal section;

an outer structure disposed about at least a portion of the distal section, wherein the outer structure comprises a first coil disposed about a portion of the distal section; and

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~~wherein the guidewire further includes~~ an inner coil disposed about a portion of the distal section at least partially within the first coil, the inner coil having a distal portion that extends distally of the distal section.

18. (original) The guidewire of claim 17, wherein the inner coil is adapted and configured to be a safety structure.

19. (currently amended) A guidewire, comprising: as in claim 16,
a proximal section comprising a metal or metal alloy, the proximal section having a
distal end;

a distal section comprising a linear elastic nickel-titanium alloy, the distal section
having a proximal end;

a connector disposed adjacent the distal end of the proximal section and the proximal
end of the distal section, the connector comprising a nickel-chromium alloy, a nickel-
molybdenum alloy, or a cobalt alloy, the connector being adapted and configured for
permanently joining the proximal section and the distal section;

an outer structure disposed about at least a portion of the distal section, wherein the
outer structure comprises a first coil disposed about a portion of the distal section, and

~~wherein the guidewire further includes~~ a flat ribbon attached to the distal section.

20. (cancelled)

21. (currently amended) A guidewire, comprising: of claim 1,
a proximal section comprising a metal or metal alloy, the proximal section having a
distal end;

a distal section comprising a linear elastic nickel-titanium alloy, the distal section
having a proximal end; and

a connector disposed adjacent the distal end of the proximal section and the proximal
end of the distal section, wherein the connector comprises a metal alloy having a Unified

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Numbering System (UNS) designation of N10276, the connector being adapted and configured for permanently joining the proximal section and the distal section.

22. (currently amended) A guidewire, comprising: as in claim 1,
a proximal section comprising a metal or metal alloy, the proximal section having a
distal end;
a distal section comprising a linear elastic nickel-titanium alloy, the distal section
having a proximal end; and
a connector disposed adjacent the distal end of the proximal section and the proximal
end of the distal section, wherein the connector comprises a nickel-molybdenum alloy
designated B-2, the connector being adapted and configured for permanently joining the
proximal section and the distal section.

23. (previously presented) A guidewire of claim 1, wherein the connector is
welded to the distal section.

24. (original) A guidewire as in claim 1, wherein the connector comprises a
tubular member disposed about the distal end of the proximal section and the proximal end of
the distal section.

25. (previously presented) A guidewire, comprising:
a proximal section having a distal end, wherein the distal end of the proximal section
includes a flexibility transition region;
a distal section comprising a linear-elastic nickel-titanium alloy, the distal section
having a proximal end, wherein the proximal end of the distal section includes a flexibility
transition region; and
a connector comprising a metal alloy having a Unified Numbering System (UNS)
designation of N06625 or N10276, or a nickel-molybdenum alloy designated B-2, the
connector being disposed adjacent the distal end of the proximal section and the proximal end

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of the distal section, the connector adapted and configured for joining the proximal section to the distal section and is welded to at least the distal section.

26. (original) A guidewire as in claim 25, wherein the proximal section has a first flexibility and the distal section has a second flexibility, and wherein flexibility transition regions overlap to define a region that blends the first flexibility with the second flexibility.

27. (previously presented) A guidewire as in claim 25, wherein the proximal section comprises stainless steel.

28. (currently amended) A guidewire, comprising: as in claim 25;
a proximal section having a distal end, wherein the distal end of the proximal section includes a flexibility transition region;

a distal section comprising a linear-elastic nickel-titanium alloy, the distal section having a proximal end, wherein the proximal end of the distal section includes a flexibility transition region;

a connector comprising a metal alloy having a Unified Numbering System (UNS) designation of N06625 or N10276, or a nickel-molybdenum alloy designated B-2, the connector being disposed adjacent the distal end of the proximal section and the proximal end of the distal section, the connector adapted and configured for joining the proximal section to the distal section and is welded to at least the distal section; and

~~wherein the guidewire further includes~~ a polymer sleeve disposed about a portion of the distal section.

29. (original) A guidewire of claim 28, wherein the guidewire further includes a coil disposed about a portion of the distal section, the coil having a distal portion that extends distally of the distal section.

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30. (currently amended) A guidewire, ~~comprising: of claim 25,~~
a proximal section having a distal end, wherein the distal end of the proximal section
includes a flexibility transition region;

a distal section comprising a linear-elastic nickel-titanium alloy, the distal section
having a proximal end, wherein the proximal end of the distal section includes a flexibility
transition region;

a connector comprising a metal alloy having a Unified Numbering System (UNS)
designation of N06625 or N10276, or a nickel-molybdenum alloy designated B-2, the
connector being disposed adjacent the distal end of the proximal section and the proximal end
of the distal section, the connector adapted and configured for joining the proximal section to
the distal section and is welded to at least the distal section; and

~~wherein the guidewire further includes a first coil disposed about a portion of the~~
distal section.

31. (original) A guidewire of claim 30, wherein the guidewire further includes an
inner coil disposed about a portion of the distal section at least partially within the first coil,
the inner coil having a distal portion that extends distally of the distal section.

32. (original) The guidewire of claim 31, wherein the inner coil is adapted and
configured to be a safety structure.

33. (previously presented) A guidewire as in claim 25, wherein the connector
comprises a tubular member.

34. (original) A guidewire as in claim 25, wherein at least a portion of the
connector is disposed between the flexibility transition regions.

35-37. (cancelled)

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38. (currently amended) A method of manufacturing a guidewire, comprising the steps of: as in claim 36;

providing a proximal section having a distal end;

providing a distal section comprising a linear elastic nickel-titanium alloy, the distal section having a proximal end;

forming flexibility transition regions in the distal end of the proximal section and the proximal end of the distal section; and

connecting the distal end of the proximal section and the proximal end of the distal section using a connector, the connector comprising a nickel-chromium alloy, a nickel-molybdenum alloy, or a cobalt alloy, wherein the connector is welded to the distal section, and wherein the connector is adapted and configured for permanently joining the proximal section to the distal section;

wherein the step of connecting the distal end of the proximal section and the proximal end of the distal section includes overlapping the proximal and distal ends.

39-53. (cancelled)

54. (previously presented) A guidewire, comprising:

a core wire having a proximal section having a distal end, and a distal section having a proximal end and a distal end, the distal section including a linear elastic nickel-titanium alloy;

a connector disposed adjacent the distal end of the proximal section and the proximal end of the distal section, the connector joining the proximal section to the distal section, the connector comprising a nickel-chromium alloy, a nickel-molybdenum alloy, or a cobalt alloy, the connector being welded to at least the distal section;

an inner coil having a proximal region and a distal region, the proximal region of the coil connected to the distal end of the distal section, and the distal region of the coil extending distally beyond the distal end of the distal section; and

an outer structure disposed about at least a portion of the distal section and the inner coil.

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55. (original) A guidewire as in claim 54, wherein the outer structure is a polymer sheath.

56. (currently amended) A guidewire as in claim 55, wherein the polymer sheath extends distally beyond the distal region of the coil to form a tip.

57. (original) A guidewire of claim 54, wherein the outer structure is an outer coil.

58. (original) A guidewire as in claim 54, wherein the inner coil is a flat wire coil.